COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF AGRICULTURE

BUREAU OF CHEMISTRY

BULLETIN NO. 258

SEED REPORT

1914

JAMES W. KELLOGG,
Chief Chemist

Published by Direction of The Secretary of Agriculture

HARRISBURG, PA.:
WM. STANLEY RAY, STATE PRINTER
1915.

ORGANIZATION

OF THE

BUREAU OF CHEMISTRY

JAMES W. KELLOGG, B. Sc., ... Chief Chemist.

GEORGE G. HUTCHISON, ... General Agent.

VICTOR B. HAUSKNECHT, M. S., ... First Assistant Chemist.

HOWARD E. GENSLER, P. D., ... Asst. Chemist and Seed Analyst.

J. EDGAR SHULL, B. Sc., ... Assistant Chemist.

JOHN F. ST. CLAIR, ... Special Agent.

W. JOHN STITELER, ... Special Agent.

W. EARL HUBER, ... Laboratory Assistant.

M. FRANCIS SAWYER, ... Clerk and Stenographer.

RUTH I. MENTZER, ... Clerk.

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF AGRICULTURE

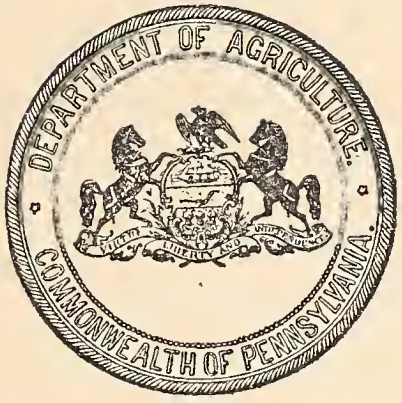
BUREAU OF CHEMISTRY

BULLETIN NO. 258

SEED REPORT

1914

JAMES W. KELLOGG,
Chief Chemist



Published by Direction of The Secretary of Agriculture

HARRISBURG, PA.:
WM. STANLEY RAY, STATE PRINTER
1915.

TABLE OF CONTENTS.

	Page.
Preface,	3
Letter of transmittal,	5
Introduction,	7
Pennsylvania seed law,	8
Standards of purity,	12
Special samples submitted for examination,	12
Method of obtaining samples for testing,	13
Directions for sending samples,	13
Charge for purity tests,	13
Table showing results of tests on special samples,	14
Method used in seed testing,	19
Official seed samples obtained by special agents,	20
Table showing results of tests on official samples,	23
Table showing average purity of official samples,	30
Table showing number of times foreign seeds occur in official samples,	31

PREFACE.

The Act of 29th April, 1913, was passed by our General Assembly in compliance with the request of many of the best farmers of the State.

The annual loss to farmers resulting from the interference of weeds with the growth of crops, while it can not be estimated correctly, is so large as to make it important that every possible means shall be employed to secure their destruction. This loss does not furnish the only reason for weed destruction. Few things are more unsightly than the promiscuous mixture of weeds and grasses that are many times seen growing along the road side, or spoiling the appearance of what might otherwise be a beautiful lawn ornamenting the surroundings of a rural or urban home.

It may be urged that weeds have their uses, and for this reason are entitled to respectful consideration. The thrifty farmer, however, who wants to turn every foot of his land to some useful purpose, is not likely to be in sympathy with this view. He prefers that his soil shall be held together by some growing crop that may increase his profits, and if his rotation is such that at some seasons of the year it is likely to be washed away or sustain loss by leaching or other natural cause, he will introduce the necessary catch crop to seize and hold together the soil particles and the plant food they contain.

It is not my purpose in this brief fore-word to call attention to the many methods that careful farmers find it necessary to employ to suppress the growth of weeds, but rather to emphasize the trite saying that "An ounce of prevention is worth a pound of cure," and certainly there can be no more fruitful method of preventing weed growth than seeing that only clean seed shall be sown.

There has come under the observation of the writer several instances, where entire fields have been polluted with wild carrot and broad and narrow leafed plantain by sowing seed containing a large per cent. of the seeds of these undesirable plants.

It is not uncommon to see mills that are used by seed-dealers so arranged that from three to four varieties of clover or grass seed are taken from the same shipment of seed as it goes from the farm to the mill where it is prepared for market. No farmer can afford to sow or plant any other seed than the best and purest that it is possible

for him to obtain, and there can be no doubt that it was this thought that led to the enactment of a pure seed law by the General Assembly of this and other states.

The Act, of which a copy will be found in this Report, makes it the duty of the Secretary of Agriculture to enforce its provisions, and in the performance of this duty I bespeak the hearty cooperation of every farmer and seed-dealer in the State.

It is to be hoped that it may never be necessary to use the authority given the official for carrying out the provisions of the Act, and to secure if possible this end is the purpose of giving this Report to the public.

N. B. CRITCHFIELD,
Secretary of Agriculture.

LETTER OF TRANSMITTAL.

DEPARTMENT OF AGRICULTURE.
BUREAU OF CHEMISTRY.

Harrisburg, Pa., Jan. 1, 1915.

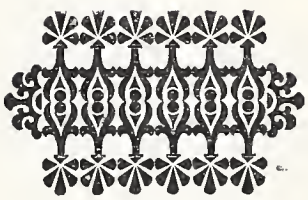
Hon. N. B. Critchfield, Secretary of Agriculture, Harrisburg, Pa.

Dear Sir: I have the honor to transmit herewith for your approval a report of the work accomplished by this Bureau in testing seeds for purity as provided by the law regulating the sales of seeds which became effective January 1,1914.

It is recommended that this report be published in bulletin form for distribution.

Very respectfully,

JAMES W. KELLOGG,
Chief Chemist.



BULLETIN NO. 258

SEED REPORT

1914

JAMES W. KELLOGG HOWARD E. GENSLER

INTRODUCTION.

The information given in this report includes a copy of the Seed Law, the results of the tests made for purity on the special samples of seeds which were sent to the Department during the year by residents of the State, and the results of examination of the official samples collected by Special Agents.

For several years the subject of a Pure Seed Law for Pennsylvania has been discussed by members of the State Board of Agriculture, Seed Growers and Seed Dealers and Officials of the Department of Agriculture. After several conferences by those interested in this work, a bill was prepared, presented to the General Assembly at its last Session, finally passed and approved by the Governor April 29, 1913. The Law became effective on January 1st, 1914.

The Secretary of Agriculture was charged with the enforcement of this law and immediately arrangements were made to perform the necessary work by installing in the Laboratory of the Department of Agriculture the proper equipment. A competent expert was employed to make the tests for purity in accordance with the requirements. The apparatus secured was of the latest and most approved design and is essentially the same as that being used by the Seed Testing Laboratory of the United States Department of Agriculture and other properly equipped Laboratories. In order that we might be fully qualified to do careful, accurate work, our Seed Analyst made a

special study of the methods of seed testing employed by the Washington Laboratory and by a number of other States. Acknowledgment is hereby made to the Botanist of the Government Seed Laboratory, and others, who assisted us in this work by extending their courtesies and giving us much valuable information.

The object of a Seed Law is to improve the quality of Seeds which are sold in the State, to protect consumers against purchasing seeds which are impure and which contain large quantities of foreign seeds, and to prevent the spread of noxious and undesirable weeds by prohibiting the sale of seeds which are inferior in quality and below the recognized standards of purity. It also makes it possible for seedsmen and purchasers located in the State to have samples tested for purity in order that the quality of seeds offered for sale, and purchased for sowing, may be determined.

During the year covered by this report, seedsmen and consumers sent to the Bureau to be tested for purity, 376 samples of seeds. The samples were examined and reports made to the senders as quickly as possible. The results obtained on these special samples have been tabulated and will be found in Table No. 1.

Special Agents of the Department visited seed dealers throughout the State and secured 202 official samples of seeds and sent them to the laboratory to be tested. The results of these tests, together with the name of seeds, the name and address of the seedsmen or growers where known, and the name and address of the dealers, will be found in Table No. II.

Table No. III was prepared to show the average purity of the official samples examined, and the standards of purity for each kind of seed, and a Table (No. IV) has been prepared showing the number of times foreign seeds were found to occur in these samples, together with the name of each seed.

PENNSYLVANIA SEED LAW

The Seed Law establishes a standard of purity for twenty-one kinds of seeds and prohibits the presence in the same of dodder or Canada thistle in excess of one seed in three thousand. It imposes a penalty for selling any of the seeds named which do not meet the standards of purity, provides for the collection and examination of samples and for the testing of special samples sent to the Department for a fee of 25 cents per sample. In order that those who have not received a copy of the Law and who may receive this report, can become familiar with its requirements, the full text is included as follows:

No. 84.

AN ACT

To regulate the sale of certain seeds; providing for the selection of samples thereof, and their examination by the Department of Agriculture, and the publication of information concerning the same; providing also for the enforcement of the act, and fixing penalties for its violation.

Department of Agriculture.

Seeds.

Standards of purity.

Section 1. Be it enacted, &c., That no person, firm, or corporation shall sell, offer, or expose for sale any of the following named seeds, within the State of Pennsylvania, containing any of the seeds of dodder or Canada thistle in excess of one (1) seed in three thousand (3,000), and which do not conform to the following standards of purity, as determined by weight:

For medium red clover, mammoth red clover, crimson clover, alfalfa, timothy-grass seed, barley, spelt, wheat, buckwheat, oats, and rye, ninety-seven per centum (97 per centum) pure.

For Alsike clover, perennial rye-grass, German millet, and Hungarian millet, ninety-five per centum (95 per centum) pure.

For white clover, ninety per centum (90 per centum) pure.

For redtop grass, solid or hulled, eighty-five per centum (85 per centum) pure.

For Canadian blue-grass, orchard grass, Kentucky blue grass, and redtop grass, unhulled, seventy-five per centum (75 per centum) pure.

Samples of seeds.

Analysis.

Reports.

Fee.

Labeling of Samples.

Section 2. It shall be the duty of the Secretary of Agriculture to receive a sample or samples of seeds from any grower, seedsmen, person, firm, or corporation who shall send such sample to the department for examination; and said secretary shall have sample or samples of seeds examined and anaylzed in conformity with the provisions of this act and the standards fixed by the regulation provided for herein. Said examination and analysis shall be made, and reports submitted, showing the condition of the same with respect to the percentage of purity, and freedom from dodder and Canada thistle, to the sender, within fifteen days after the sample is received. A fee of twenty-five cents shall be paid for each examination and analysis, when the sample is submitted, and all moneys so received shall be covered monthly into the State Treasury by the Secretary of Agriculture. For the purpose of this act, the sample of seed shall consist of not more than four ounces, nor less than two ounces, of the seed to be examined. The sample submitted shall have affixed thereto, distinctly printed or plainly written in English, a statement certifying the name of the seed and the full name and address of the grower or seedman, or person or firm or corporation submitting sample for examination and report.

Violations.

Penalty.

Experts.

Reports.

Publication of reports.

Right of entry, etc.

Securing samples.

Proviso.

Interference with officials.

Penalty.

Application of act.

Section 3. Any person acting for himself or as agent for another, or any member or superintendent or agent of any firm or corporation, who violates the provisions of section one of this act, shall be guilty of a misdemeanor, and on conviction shall be sentenced to pay a fine of not less than ten dollars or more than twenty-five dollars for each offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act; and for this purpose he is hereby authorized and empowered, by himself or his duly qualified agent or agents, to collect samples of the seeds named in section one of this act, and to have them examined by a competent expert, who shall report to said Secretary of Agriculture, and also to the persons, firms, or corporations from whom such samples were taken, the conditions of the same with respect to purity and freedom from weed seeds; and the report made to the Secretary of Agriculture shall contain the names and post office addresses of the persons, firms, or corporations from whom the samples were taken, which reports may be published from time to time for the information of the public by the Secretary of Agriculture, if in his judgment such publication is desirable. The said Secretary of Agriculture, or his agents duly authorized by him, shall, for the purpose of carrying out the provisions of this act, have full access, ingress, and egress to and from all places of business, barns, buildings, vehicles, cars, and vessels in which such seeds may be stored, or in which they may be held for transportation or sale, within this State; and shall have power to open any packages containing such seeds, and take therefrom samples of the same, upon tendering to the owner or owners, or his or their agents, the value of such samples: Provided, That the owner or owners of such seeds shall be given the opportunity to be present and witness the taking of such samples.

Section 4. Any one interfering with the person charged with the enforcement of this act, or any of his duly authorized agents, when in the discharge of the duties herein enjoined, or refusing such persons the privilege of entering any room, building, or other place where the seeds herein named are kept for sale for seeding purposes, within this State, shall be guilty of a misdemeanor, and upon conviction shall be sentenced to pay a fine of one hundred dollars, together with the costs of prosecution.

Section 5. The provisions of this act shall not apply to seeds, as defined in this act, marked "not clean," and shipped to some market or seed merchant to be cleaned and graded before being offered or exposed for sale, or to seeds being held in storage for the purpose of being cleaned and graded.

Section 6. All fines and costs imposed and recovered under the provisions of this act shall be paid to the Secretary of Agriculture or his agents, and by him immediately covered into the State Treasury; and all necessary costs and expenses arising under the provisions of this act shall, after approval in writing by the Secretary of Agriculture, be paid by the State Treasurer, upon warrant of the Auditor General, in the manner now provided by law; Provided, That the amount so expended shall not exceed four thousand dollars in any one year.

Disposition of fines and costs.

Proviso.

Section 7. City magistrates and justices of the peace throughout this Commonwealth shall have jurisdiction to hear and determinate actions arising from violations of the provisions of this act, and to hold for court or impose the penalties prescribed, subject to appeal as the laws shall direct.

Jurisdiction of justices of the peace and magistrates.

Section 8. This act shall take effect and be in force on and after the first day of January, one thousand nine hundred and fourteen.

When act takes effect.

Section 9. All acts or parts of acts inconsistent herewith are hereby repealed.

Repeal.

Approved—The 29th day of April, A. D. 1913.

JOHN K. TENER.

The foregoing is a true and correct copy of the Act of the General Assembly No. 84.

ROBERT McAFEE,
Secretary of the Commonwealth.

STANDARDS OF PURITY

The standards of purity established by the Seed Law and determined by weight covers twenty- one kinds of seeds and ranges from 75 per cent. to 97 per cent., as follows:

Medium Red Clover,	Trifolium pratense,	97 %.
Mammoth Red Clover,	Trifolium pratense,	97 %.
Crimson Clover,	Trifolium incarnatum,	97 %.
Alfalfa,	Medicago sativa,	97 %.
Timothy Grass,	Phleum pratense,	97 %.
Barley,	Hordeum vulgare,	97 %.
Spelt,	Triticum aestivum Spelta,	97 %.
Wheat,	Triticum aestivum,	97 %.
Buckwheat,	Fagopyrum Fagopyrum,	97 %.
Oats,	Avena sativa,	97 %.
Rye,	Secale cereale,	97 %.
Alsike Clover,	Trifolium hybridum,	95 %.
Perennial Rye Grass,	Lolium perenne,	95 %.
German Millet,	Chaetochloa italica,	95 %.
Hungarian Millet,	Chaetochloa italica,	95 %.
White Clover,	Trifolium repens,	90 %.
Red Top Grass, (solid or hulled).	Agrostis alba,	85 %.
Canadian Blue Grass,	Poa compressa,	75 %.
Orchard Grass,	Dactylis glomerata,	75 %.
Kentucky Blue Grass,	Poa pratensis,	75 %.
Red Top (unhulled),	Agrostis alba,	75 %.

Dodder and Canada thistle are prohibited from being present in excess of 1 seed in 3,000.

SPECIAL SAMPLES SUBMITTED FOR EXAMINATION.

In order that Pennsylvania purchasers of and dealers in the seeds covered by the law may have samples tested for purity and thereby learn of the character of seeds being sold, or offered for sale, provision is made for the examination of special samples sent to the Department for the fee of 25 cents per sample. From 2 to 4 ounces of each sample tested should be sent, together with the fee in the form of a certified check or money order made payable to N. B. Critchfield, Secretary of Agriculture, or cash. If only one sample is submitted, it will be convenient to insert the fee in cash in the sample of seed. Envelopes should be used for this purpose which are strong and which can be tightly and securely fastened to prevent seeds from being lost in transit.

Both samples and fee should be sent direct to the Bureau of Chemistry, accompanied by a letter advising that sample or samples are being sent to be tested for purity. Reports showing results

of tests, together with receipt for fees, will be mailed to senders as quickly as possible after receipt of samples and fee. Unless there happens to be a large number of requests for the testing of special samples, reports will be sent out in from one to three days after they have been received. As the Law requires a charge to be made, and the fee to be submitted with the same, a delay in remitting the amount of charge will cause a delay in receiving reports.

METHOD OF OBTAINING SAMPLES FOR TESTING

Unless the samples to be examined are carefully secured and fairly represent the lot of seeds being sampled, the results of the tests made will be inaccurate and misleading. The careful selection of samples is of the most importance in obtaining results which will truthfully represent the quality of the stock, or shipment being examined. If the seed is in sacks, bags or other large containers, samples should be taken from several different places and thoroughly mixed, and from 2 to 4 ounces placed in a mailing or special seed envelope. The name of the seed and the name and address of the sender should be plainly written on the package and addressed to the Bureau of Chemistry. The tests which will be made on special samples submitted for examination will include determinations for the percentage of pure seed, foreign seed and inert matter and the condition of the same with respect to freedom from dodder and Canada thistle.

The following directions should be carefully noted:

Amount of Sample:—2 to 4 ounces, carefully secured and representative of whole lot.

Envelopes:—Should be used and carefully sealed.

Address:—Bureau of Chemistry, Pennsylvania Department of Agriculture, Box R, Harrisburg, Pa. The name of seed and address of sender should be also included.

Charge for Purity Test:—25 cents is the fee charged and it should be submitted with sample in the form of a certified check, money order or cash. If cash is sent for one or two samples, it may be inserted in the sample of seed with safety, if the envelope is carefully sealed.

The following Table (No. I) shows the results of the test for purity on 376 special samples which were sent to the Department during the year covered by this report. It will be noted that only in a few cases the standards were not met, and that the samples as a whole were of a good quality. The different kinds of seeds are grouped together and an average of the results obtained estimated for comparison:

TABLE NO. I—RESULTS OF TESTS ON SPECIAL SAMPLES.

Analyst No.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per et.	Per et.		
B 1	Red clover,	99.4	0.2	0.4	None.	None.
B 3	Red clover,	94.9	1.5	3.6	None.	None.
B 5	Red clover,	99.3	0.4	0.3	None.	None.
B 6	Red clover,	99.1	0.5	0.4	None.	None.
B 7	Red clover,	99.4	0.4	0.2	None.	None.
B 8	Red clover,	98.8	0.7	0.5	None.	None.
B 9	Red clover,	98.3	1.3	0.4	None.	None.
B 29	Red clover,	99.1	0.8	0.1	None.	None.
B 30	Red clover,	98.8	0.5	0.7	None.	None.
B 31	Red clover,	98.1	1.3	0.6	None.	None.
B 33	Red clover,	99.7	0.1	0.2	None.	None.
B 37	Red clover,	96.8	2.7	0.5	None.	None.
B 39	Red clover,	99.5	0.3	0.2	None.	None.
B 41	Red clover,	99.6	0.05	0.35	None.	None.
B 42	Red clover,	99.3	0.5	0.2	None.	None.
B 43	Red clover,	98.8	0.9	0.3	None.	None.
B 44	Red clover,	99.5	0.2	0.3	None.	None.
B 46	Red clover,	98.5	0.9	0.6	None.	None.
B 47	Red clover,	98.9	0.2	0.9	None.	None.
B 48	Red clover,	97.5	2.1	0.4	None.	1–20,000
B 55	Red clover,	99.8	0.1	0.1	None.	None.
B 57	Red clover,	99.9	0.05	0.05	None.	None.
B 61	Red clover,	98.8	0.7	0.5	None.	None.
B 62	Red clover,	99.8	0.1	0.1	None.	None.
B 67	Red clover,	96.9	2.4	0.7	None.	1–24,000
B 68	Red clover,	99.6	0.3	0.1	None.	None.
B 69	Red clover,	99.6	0.2	0.2	None.	None.
B 70	Red clover,	98.7	0.6	0.7	None.	None.
B 73	Red clover,	99.6	0.3	0.1	None.	None.
B 77	Red clover,	98.3	1.3	0.4	None.	None.
B 78	Red clover,	94.5	5.0	0.5	None.	None.
B 79	Red clover,	99.4	0.3	0.3	None.	None.
B 84	Red clover,	99.3	0.5	0.2	None.	None.
B 88	Red clover,	99.6	0.2	0.2	None.	None.
B 91	Red clover,	98.8	0.6	0.6	None.	None.
B 95	Red clover,	96.4	2.3	1.3	None.	None.
B 97	Red clover,	99.3	0.6	0.1	None.	None.
B 99	Red clover,	94.5	4.4	1.1	None.	None.
B 100	Red clover,	96.3	2.7	1.0	None.	None.
B 101	Red clover,	99.0	0.6	0.4	None.	None.
B 102	Red clover,	90.0	8.9	1.1	None.	None.
B 103	Red clover,	89.4	8.8	1.8	None.	None.
B 105	Red clover,	95.4	2.0	2.6	None.	None.
B 106	Red clover,	98.7	1.2	0.1	None.	None.
B 110	Red clover,	99.2	0.2	0.6	None.	None.
B 111	Red clover,	99.2	0.3	0.5	None.	None.
B 112	Red clover,	99.7	0.2	0.1	None.	None.
B 115	Red clover,	99.3	0.1	0.6	None.	None.
B 118	Red clover,	92.7	6.6	0.7	None.	None.
B 119	Red clover,	98.8	0.9	0.3	None.	None.
B 120	Red clover,	99.3	0.1	0.6	None.	None.
B 121	Red clover,	97.5	1.9	0.6	None.	None.
B 124	Red clover,	99.3	0.5	0.2	None.	None.
B 125	Red clover,	96.0	3.3	0.7	None.	None.
B 127	Red clover,	98.9	0.9	0.2	None.	None.
B 129	Red clover,	99.7	0.1	0.2	None.	None.
B 131	Red clover,	99.1	0.7	0.2	None.	None.
B 132	Red clover,	99.5	0.2	0.3	None.	None.
B 133	Red clover,	99.2	0.1	0.7	None.	None.
B 134	Red clover,	97.0	0.9	2.1	None.	None.
B 135	Red clover,	97.3	1.9	0.8	None.	None.
B 136	Red clover,	98.0	1.3	0.7	None.	None.
B 138	Red clover,	97.4	2.2	0.4	None.	None.
B 146	Red clover,	99.85	0.06	0.09	None.	None.
B 148	Red clover,	97.7	1.7	0.6	None.	None.
B 150	Red clover,	99.7	0.2	0.1	None.	None.
B 151	Red clover,	99.7	Trace.	0.3	None.	None.
B 152	Red clover,	99.3	0.3	0.4	None.	None.
B 153	Red clover,	98.2	1.5	0.3	None.	None.
B 154	Red clover,	99.4	0.4	0.2	None.	None.
B 155	Red clover,	99.4	0.4	0.2	None.	None.
B 156	Red clover,	99.9	—0	.1—	None.	None.
B 157	Red clover,	99.0	0.7	0.3	None.	None.
B 158	Red clover,	97.5	2.2	0.3	None.	None.
B 159	Red clover,	92.7	3.4	3.9	None.	None.
B 160	Red clover,	99.3	0.5	0.2	None.	None.
B 161	Red clover,	96.8	2.6	0.6	None.	None.
B 163	Red clover,	99.6	0.3	0.1	None.	None.
B 164	Red clover,	99.2	0.5	0.3	None.	None.
B 169	Red clover,	99.0	0.4	0.6	None.	None.
B 170	Red clover,	99.8	Trace.	0.2	None.	None.

TABLE NO. I—RESULTS OF TESTS ON SPECIAL SAMPLES—Continued.

Analyst No.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.		
B 173	Red clover,	98.7	1.0	0.3	None.	None.
B 174	Red clover,	98.3	1.1	0.6	None.	None.
B 175	Red clover,	99.8	0.13	0.07	None.	None.
B 176	Red clover,	99.2	0.3	0.5	None.	None.
B 177	Red clover,	99.6	0.3	0.1	None.	None.
B 179	Red clover,	99.3	0.4	0.3	None.	None.
B 181	Red clover,	90.3	9.5	0.2	None.	None.
B 182	Red clover,	96.7	0.4	2.9	None.	None.
B 186	Red clover,	95.0	2.8	2.2	None.	None.
B 187	Red clover,	99.5	0.4	0.1	None.	None.
B 188	Red clover,	98.2	1.3	0.5	None.	None.
B 190	Red clover,	99.6	0.3	0.1	None.	None.
B 192	Red clover,	92.2	7.2	0.6	None.	None.
B 193	Red clover,	98.7	1.0	0.3	None.	None.
B 194	Red clover,	99.5	0.2	0.3	None.	None.
B 195	Red clover,	98.9	0.6	0.5	None.	None.
B 196	Red clover,	98.8	0.4	0.8	None.	None.
B 197	Red clover,	99.0	0.7	0.3	None.	None.
B 198	Red clover,	99.5	0.3	0.2	None.	None.
B 199	Red clover,	92.3	3.0	4.7	None.	None.
B 200	Red clover,	97.4	0.8	1.8	None.	None.
B 201	Red clover,	97.2	2.0	0.8	None.	None.
B 202	Red clover,	99.2	0.5	0.3	1–15,000	None.
B 203	Red clover,	99.9	Trace.	Trace.	None.	None.
B 204	Red clover,	98.9	0.1	0.9	None.	None.
B 205	Red clover,	98.5	1.0	0.5	None.	None.
B 206	Red clover,	97.7	0.4	1.9	None.	None.
B 207	Red clover,	99.5	0.3	0.2	None.	None.
B 208	Red clover,	99.6	0.3	0.1	None.	None.
B 209	Red clover,	99.3	0.1	0.6	None.	None.
B 210	Red clover,	99.7	0.0	0.3	None.	None.
B 212	Red clover,	99.5	0.1	0.4	None.	None.
B 213	Red clover,	98.6	0.1	1.3	None.	None.
B 214	Red clover,	98.6	0.4	1.0	None.	None.
B 215	Red clover,	98.9	0.3	0.8	None.	None.
B 216	Red clover,	99.5	0.4	0.1	None.	None.
B 217	Red clover,	96.8	2.2	1.0	None.	None.
B 218	Red clover,	99.2	0.3	0.5	None.	None.
B 219	Red clover,	99.0	0.3	0.7	None.	None.
B 220	Red clover,	99.5	0.4	0.1	None.	None.
B 221	Red clover,	98.3	1.5	0.2	None.	None.
B 222	Red clover,	95.4	3.0	1.6	None.	None.
B 223	Red clover,	96.7	3.0	0.3	None.	None.
B 225	Red clover,	99.0	0.8	0.2	None.	None.
B 226	Red clover,	98.9	0.8	0.3	None.	None.
B 227	Red clover,	96.5	2.7	0.8	None.	None.
B 228	Red clover,	97.8	1.0	1.2	None.	None.
B 229	Red clover,	99.0	0.8	0.2	None.	None.
B 230	Red clover,	96.7	2.0	1.3	None.	None.
B 231	Red clover,	99.9	Trace.	Trace.	None.	None.
B 232	Red clover,	99.0	0.2	0.8	None.	None.
B 234	Red clover,	94.3	5.0	0.7	None.	None.
B 235	Red clover,	98.2	0.5	1.3	None.	None.
B 236	Red clover,	96.5	2.0	1.5	None.	None.
B 237	Red clover,	98.3	1.5	0.2	None.	None.
B 238	Red clover,	97.2	2.7	0.1	None.	None.
B 239	Red clover,	99.5	0.3	0.2	None.	None.
B 240	Red clover,	99.7	0.2	0.1	None.	None.
B 241	Red clover,	98.0	1.0	1.0	None.	None.
B 242	Red clover,	98.6	0.6	0.8	None.	None.
B 243	Red clover,	94.1	5.1	0.8	None.	None.
B 245	Red clover,	96.8	1.0	2.2	None.	None.
B 246	Red clover,	97.2	2.1	0.7	None.	None.
B 247	Red clover,	97.1	1.4	1.5	None.	None.
B 248	Red clover,	98.3	0.7	1.0	None.	None.
B 249	Red clover,	97.8	1.1	1.1	None.	None.
B 250	Red clover,	94.3	2.0	3.7	None.	None.
B 251	Red clover,	92.0	6.5	1.5	None.	None.
B 252	Red clover,	94.1	4.9	1.0	None.	None.
B 253	Red clover,	99.2	0.6	0.2	None.	None.
B 254	Red clover,	99.2	0.7	Trace.	None.	None.
B 256	Red clover,	99.7	0.1	0.2	None.	None.
B 257	Red clover,	95.4	4.2	0.4	None.	None.
B 258	Red clover,	99.0	0.6	0.4	None.	None.
B 259	Red clover,	97.0	2.6	0.4	None.	None.
B 260	Red clover,	99.5	0.4	0.1	None.	None.
B 261	Red clover,	99.9	—0	.1—	None.	None.
B 264	Red clover,	97.9	1.2	0.9	None.	None.
B 265	Red clover,	99.6	0.1	0.3	None.	None.
B 266	Red clover,	99.8	0.1	Trace.	None.	None.
B 272	Red clover,	99.2	0.7	0.1	None.	None.
B 273	Red clover,	98.1	1.2	0.7	None.	None.

TABLE NO. I—RESULTS OF TESTS ON SPECIAL SAMPLES—Continued.

Analyst No.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.		
B 274	Red clover,	96.6	0.6	2.8	None.	None.
B 275	Red clover,	94.6	2.3	3.1	None.	None.
B 276	Red clover,	98.4	0.4	1.2	None.	None.
B 277	Red clover,	98.2	1.0	0.8	None.	None.
B 278	Red clover,	99.3	0.5	0.2	None.	None.
B 279	Red clover,	98.5	0.9	0.6	None.	None.
B 280	Red clover,	97.7	0.6	1.7	None.	None.
B 281	Red clover,	96.6	2.1	1.3	None.	None.
B 282	Red clover,	94.3	4.5	1.2	None.	None.
B 283	Red clover,	99.5	0.2	0.3	None.	None.
B 285	Red clover,	99.7	0.2	0.1	1-15,000	None.
B 286	Red clover,	98.8	0.3	0.9	None.	None.
B 288	Red clover,	98.3	1.4	0.3	None.	None.
B 289	Red clover,	98.6	0.9	0.5	None.	None.
B 290	Red clover,	98.3	1.5	0.2	None.	None.
B 292	Red clover,	99.4	0.3	0.3	None.	None.
B 293	Red clover,	94.6	1.4	4.0	None.	None.
B 295	Red clover,	99.0	0.6	0.4	None.	None.
B 296	Red clover,	97.0	1.2	1.8	None.	None.
B 297	Red clover,	98.7	0.6	0.7	None.	None.
B 298	Red clover,	99.7	—0	.3—	None.	None.
B 299	Red clover,	95.7	0.5	3.8	None.	None.
B 300	Red clover,	99.1	0.4	0.5	None.	None.
B 301	Red clover,	99.9	Trace.	Trace.	None.	None.
B 302	Red clover,	95.2	3.7	1.1	None.	None.
B 303	Red clover,	99.7	0.1	0.2	None.	None.
B 304	Red clover,	97.6	1.6	0.8	None.	None.
B 305	Red clover,	96.4	2.6	1.0	None.	None.
B 306	Red clover,	98.4	1.3	0.3	None.	None.
B 307	Red clover,	96.4	3.6	0.4	None.	None.
B 308	Red clover,	99.8	—0	.2—	None.	None.
B 309	Red clover,	99.9	—0	.1—	None.	None.
B 310	Red clover,	96.9	1.1	2.0	None.	None.
B 313	Red clover,	97.5	1.0	1.5	None.	None.
B 322	Red clover,	98.5	0.7	0.8	None.	None.
B 352	Red clover,	99.7	0.2	0.1	None.	None.
B 353	Red clover,	97.6	2.2	0.2	None.	None.
B 354	Red clover,	99.8	0.1	0.1	None.	None.
B 355	Red clover,	99.82	0.12	0.06	None.	None.
B 359	Red clover,	98.1	0.5	1.4	None.	None.
B 360	Red clover,	98.6	1.3	0.1	None.	None.
B 361	Red clover,	92.8	6.0	1.2	None.	None.
B 362	Red clover,	95.45	2.97	1.58	None.	None.
B 363	Red clover,	99.3	0.4	0.3	None.	None.
B 364	Red clover,	99.4	0.2	0.4	None.	None.
B 365	Red clover,	99.92	0.0	0.08	None.	None.
B 367	Red clover,	99.15	0.58	0.27	None.	None.
B 368	Red clover,	99.29	0.34	0.37	None.	None.
B 370	Red clover,	98.80	0.60	0.60	None.	None.
B 371	Red clover,	99.00	0.30	0.70	None.	None.
B 372	Red clover,	97.80	2.00	0.20	None.	None.
B 373	Red clover,	97.10	2.40	0.50	None.	None.
B 374	Red clover,	97.1	2.4	0.5	None.	None.
B 375	Red clover,	99.1	0.3	0.6	None.	None.
B 376	Red clover,	93.4	4.6	2.0	None.	None.
	Average,	98.1	1.2	0.7		
B 11	Crimson clover,	98.0	0.5	1.5	None.	None.
B 72	Crimson clover,	98.5	0.8	0.7	None.	None.
B 139	Crimson clover,	98.5	1.4	0.1	None.	None.
B 162	Crimson clover,	96.8	0.4	2.8	None.	None.
	Average,	97.9	0.8	1.3		
B 52	Alfalfa,	99.7	0.1	0.2	None.	None.
B 53	Alfalfa,	99.7	0.1	0.2	None.	None.
B 54	Alfalfa,	99.4	0.1	0.5	None.	None.
B 60	Alfalfa,	99.9	0.0	0.1	None.	None.
B 65	Alfalfa,	99.4	0.0	0.6	None.	None.
B 66	Alfalfa,	99.6	0.2	0.2	None.	None.
B 71	Alfalfa,	99.6	0.1	0.3	None.	None.
B 80	Alfalfa,	99.92	0.02	0.06	None.	None.
B 82	Alfalfa,	99.8	0.0	0.2	None.	None.
B 83	Alfalfa,	99.98	0.0	0.02	None.	None.
B 87	Alfalfa,	99.3	0.1	0.6	None.	None.
B 90	Alfalfa,	99.8	0.1	0.1	None.	None.
B 93	Alfalfa,	99.80	0.15	0.05	None.	None.
B 98	Alfalfa,	99.4	0.1	0.5	None.	None.
B 104	Alfalfa,	99.80	0.18	0.02	None.	None.
B 137	Alfalfa,	99.7	0.1	0.2	None.	None.
B 147	Alfalfa,	99.78	0.04	0.18	None.	None.
B 165	Alfalfa,	99.4	0.1	0.5	None.	None.

TABLE NO. I—RESULTS OF TESTS ON SPECIAL SAMPLES—Continued.

Analyst No.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.		
B 211	Alfalfa,	98.6	0.3	1.1	None.	None.
B 284	Alfalfa,	99.7	0.1	0.2	None.	None.
B 291	Alfalfa,	99.7	0.0	0.3	None.	None.
B 323	Alfalfa,	96.0	2.7	1.3	1-275	None.
	Average,	99.5	0.2	0.3		
B 2	Timothy grass,	98.0	0.6	1.4	None.	None.
B 4	Timothy grass,	98.6	1.0	0.4	None.	None.
B 22	Timothy grass,	99.6	0.2	0.2	None.	None.
B 34	Timothy grass,	99.5	0.2	0.3	None.	None.
B 35	Timothy grass,	99.5	0.2	0.3	None.	None.
B 36	Timothy grass,	97.4	1.1	1.5	None.	None.
B 38	Timothy grass,	99.0	0.6	0.4	None.	None.
B 49	Timothy grass,	99.0	0.4	0.6	None.	None.
B 50	Timothy grass,	99.7	0.1	0.2	None.	None.
B 51	Timothy grass,	99.6	0.1	0.3	None.	None.
B 58	Timothy grass,	99.8	0.1	0.1	None.	None.
B 59	Timothy grass,	99.5	0.3	0.2	None.	None.
B 64	Timothy grass,	99.2	0.4	0.4	None.	None.
B 81	Timothy grass,	99.9	0.05	0.05	None.	None.
B 86	Timothy grass,	99.7	0.2	0.1	None.	None.
B 89	Timothy grass,	99.3	0.4	0.3	None.	None.
B 92	Timothy grass,	99.6	0.2	0.2	None.	None.
B 96	Timothy grass,	99.6	0.1	0.3	None.	None.
B 107	Timothy grass,	99.3	0.3	0.4	None.	None.
B 108	Timothy grass,	99.4	0.3	0.3	None.	None.
B 109	Timothy grass,	99.3	0.4	0.3	None.	None.
B 116	Timothy grass,	98.2	1.4	0.4	None.	None.
B 117	Timothy grass,	98.5	0.8	0.7	None.	None.
B 122	Timothy grass,	95.0	4.8	0.2	None.	None.
B 123	Timothy grass,	98.4	0.9	0.7	None.	None.
B 130	Timothy grass,	99.6	0.1	0.3	None.	None.
B 140	Timothy grass,	98.9	0.3	0.8	None.	None.
B 167	Timothy grass,	99.7	0.3	Trace.	None.	None.
B 172	Timothy grass,	98.9	0.4	0.7	None.	None.
B 183	Timothy grass,	98.4	0.5	1.1	None.	None.
B 189	Timothy grass,	99.2	0.8	Trace.	None.	None.
B 224	Timothy grass,	97.9	0.7	1.4	None.	None.
B 262	Timothy grass,	99.5	0.4	0.1	None.	None.
B 263	Timothy grass,	99.7	0.1	0.2	None.	None.
B 287	Timothy grass,	98.6	1.1	0.3	None.	None.
B 311	Timothy grass,	97.6	1.4	1.0	None.	None.
B 312	Timothy grass,	93.6	4.8	1.6	None.	None.
B 314	Timothy grass,	99.5	0.3	0.2	None.	None.
B 315	Timothy grass,	98.7	1.0	0.3	None.	None.
B 316	Timothy grass,	98.9	0.6	0.5	None.	None.
B 317	Timothy grass,	98.9	0.8	0.3	None.	None.
B 318	Timothy grass,	99.5	0.2	0.3	None.	None.
B 319	Timothy grass,	99.6	0.1	0.3	None.	None.
B 321	Timothy grass,	98.6	0.2	1.2	None.	None.
B 325	Timothy grass,	99.2	0.7	0.1	None.	None.
B 326	Timothy grass,	98.4	0.9	0.7	None.	None.
B 327	Timothy grass,	99.7	0.1	0.2	None.	None.
B 328	Timothy grass,	99.9	0.0	Trace.	None.	None.
B 330	Timothy grass,	97.8	0.5	1.7	None.	None.
B 331	Timothy grass,	97.8	0.8	1.4	None.	None.
B 332	Timothy grass,	99.1	0.7	0.2	None.	None.
B 333	Timothy grass,	99.2	0.7	0.1	None.	None.
B 334	Timothy grass,	99.7	0.1	0.2	None.	None.
B 335	Timothy grass,	99.71	0.14	0.15	None.	None.
B 336	Timothy grass,	99.8	0.1	0.1	None.	None.
B 338	Timothy grass,	99.92	0.04	0.04	None.	None.
B 339	Timothy grass,	99.7	0.1	0.2	None.	None.
B 340	Timothy grass,	98.9	0.9	0.2	None.	None.
B 341	Timothy grass,	99.1	0.4	0.5	None.	None.
B 342	Timothy grass,	99.52	0.14	0.34	None.	None.
B 343	Timothy grass,	99.6	0.1	0.3	None.	None.
B 344	Timothy grass,	98.4	1.3	0.3	None.	None.
B 345	Timothy grass,	99.0	0.7	0.3	None.	None.
B 346	Timothy grass,	98.8	0.9	0.3	None.	None.
B 347	Timothy grass,	99.2	0.4	0.4	None.	None.
B 348	Timothy grass,	99.97	Trace.	Trace.	None.	None.
B 349	Timothy grass,	99.9	Trace.	Trace.	None.	None.
B 350	Timothy grass,	99.6	0.2	0.2	None.	None.
B 351	Timothy grass,	98.8	0.8	0.4	None.	None.
	Average,	99.0	0.6	0.4		
B 24	Barley,	99.5	0.0	0.5	None.	None.
B 23	Spelt,	99.6	0.4	0.0	None.	None.
B 27	Buckwheat,	99.8	0.1	Trace.	None.	None.

TABLE NO. 1—RESULTS OF TESTS ON SPECIAL SAMPLES—Continued.

Analyst No.	Name of Seed.	Pure seed.	Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
		Per ct.	Per ct.	Per ct.		
B 16	Oats,	99.3	0.4	0.3	None.	None.
B 17	Oats,	99.2	0.6	0.2	None.	None.
B 18	Oats,	99.1	0.0	0.9	None.	None.
B 19	Oats,	98.9	0.2	0.9	None.	None.
B 142	Oats,	99.9	0.0	0.1	None.	None.
B 143	Oats,	99.83	0.03	0.14	None.	None.
B 144	Oats,	99.87	0.00	0.13	None.	None.
B 145	Oats,	97.86	0.01	2.13	None.	None.
B 233	Oats,	99.5	0.3	0.2	None.	None.
B 244	Oats,	99.5	—0	.5—	None.	None.
	Average,	99.3	0.2	0.3		
B 12	Rye,	99.0	1.0	Trace.	None.	None.
B 13	Rye,	96.0	0.6	3.4	None.	None.
B 320	Rye,	82.1	16.1	1.8	None.	None.
	Average,	92.4	5.9	1.7		
B 32	Alsike clover,	95.3	3.9	0.8	None.	None.
B 40	Alsike clover,	99.2	0.4	0.4	None.	None.
B 45	Alsike clover,	96.9	2.0	1.1	None.	None.
B 56	Alsike clover,	98.6	1.1	0.3	None.	None.
B 85	Alsike clover,	99.8	0.2	0.0	None.	None.
B 94	Alsike clover,	97.2	2.3	0.5	None.	None.
B 113	Alsike clover,	96.7	3.0	0.3	None.	None.
B 114	Alsike clover,	97.1	2.8	0.1	None.	None.
B 126	Alsike clover,	95.4	3.7	0.9	None.	None.
B 128	Alsike clover,	92.3	6.7	1.0	None.	None.
B 149	Alsike clover,	97.3	2.0	0.7	None.	None.
B 166	Alsike clover,	94.2	5.0	0.8	None.	None.
B 171	Alsike clover,	99.3	0.7	0.0	None.	None.
B 178	Alsike clover,	95.5	3.7	0.8	None.	None.
B 180	Alsike clover,	96.1	3.3	0.6	None.	None.
B 191	Alsike clover,	95.1	4.2	0.7	None.	None.
B 255	Alsike clover,	95.0	4.4	0.6	None.	None.
B 268	Alsike clover,	97.2	2.6	0.2	None.	None.
B 329	Alsike clover,	99.61	0.08	0.31	None.	None.
B 366	Alsike clover,	97.7	0.0	2.3	None.	None.
	Average,	96.8	2.6	0.6		
B 25	Perennial rye grass,	98.7	0.9	0.4	None.	None.
B 358	Perennial rye grass,	99.0	0.8	0.2	None.	None.
	Average,	98.9	0.8	0.3		
B 15	German millet,	99.6	0.3	0.1	None.	None.
B 14	Hungarian millet,	99.2	0.4	0.4	None.	None.
B 10	White clover,	99.0	0.4	0.6	None.	None.
B 63	White clover,	98.1	1.4	0.5	None.	None.
B 184	White clover,	93.5	5.4	1.1	None.	None.
B 267	White clover,	99.3	0.5	0.2	None.	None.
B 369	White clover,	97.70	1.70	0.60	None.	None.
	Average,	97.5	1.9	0.6		
B 21	Red Top grass (hulled),	92.3	—7	.7—	None.	None.
B 74	Red Top grass (hulled),	85.0	—15	.0—	None.	None.
B 168	Red Top grass (hulled),	91.7	2.3	6.0	None.	None.
B 269	Red Top grass (hulled),	89.6	1.3	9.1	None.	None.
B 357	Red Top grass (hulled),	92.2	0.9	6.9	None.	None.
	Average,	90.2	—9	.8—		
B 26	Canadian blue grass,	83.0	10.8	6.2	None.	None.
B 185	Canadian blue grass,	79.4	8.7	11.9	None.	1-5,000
	Average,	81.2	9.8	9.0		
B 28	Orchard grass,	83.4	1.5	15.1	None.	None.
B 76	Orchard grass,	81.2	2.2	16.6	None.	None.
	Average,	82.3	1.8	15.9		
B 75	Kentucky blue grass,	87.1	0.6	12.3	None.	None.
B 271	Kentucky blue grass,	86.1	Trace.	13.9	None.	None.
B 337	Kentucky blue grass,	88.1	0.1	11.9	None.	None.
B 376	Kentucky blue grass,	84.6	0.4	15.0	None.	None.
	Average,	86.5	0.3	13.2		
B 29	Red Top grass (unhulled),	62.7	—37	.3—	None.	None.
B 141	Red Top grass (unhulled),	49.9	6.0	44.1	None.	None.
B 270	Red Top grass (unhulled),	32.6	17.8	49.6	None.	None.
	Average,	48.4	—51	.6—		
B 294	White sweet clover,	95.7	3.3	1.0	None.	None.
B 324	Clover screenings,	77.1	17.1	5.8	1-2,000	None.

METHODS USED IN SEED TESTING

The methods used in testing seeds for purity are essentially the same as those employed in the Seed Laboratory of the United States Department of Agriculture and other well equipped laboratories. The greater part of our collection of seeds was furnished by the Government Seed Laboratory and our apparatus is of the same make and design, and includes a blower or air blast separator, seed mixer, analytical balances, necessary lenses and other minor instruments.

After the samples of seeds have been received in the laboratory, they are given a number and separately examined. The official samples collected by special agents are received in special seed envelopes and those samples which are sent in by dealers or seedsmen located in the State are placed in envelopes for this purpose and properly labeled and numbered. Each sample is thoroughly mixed and sub-divided until the amount necessary for a test is obtained. A mixture of seeds cannot be uniformly mixed in the same manner as can material resembling flour, meal or mixed feeds, for the reason that heavier and smaller seeds have a tendency to separate from the lighter and larger ones, and, therefore, the portion of the sample to be tested must be secured in a manner to overcome this tendency of the seeds to become segregated and improperly mixed. A mixing and dividing apparatus is, therefore, used to obtain the proper results. It consists of a revolving funnel shaped hopper into which the whole sample is placed and by means of a set screw and disc to regulate the delivery of the seed, by revolving the hopper with the rotating crank, the sample is thoroughly and accurately mixed and delivered equally divided through V shaped delivery tubes into two receptacles. In this manner the sample is sub-divided until the required amount is secured which varies with the size and weight of the seeds under examination from 1 to 30 grams. This amount is carefully weighed on an analytical balance, all weights being recorded to the fourth decimal part of a gram.

The weighed portion of the sample is then separated into pure seed, foreign seed and inert matter by the aid of the eye or lenses and occasionally assisted by means of various sized sieves, as the case demands. In the case of small seeds where light chaffy material is present, and especially in the case of grasses, which contain chaff, pieces of stems, leaves and other foreign material, a preliminary separation is made which is effected by means of an electric blower. This apparatus consists of a long glass tube, one end being bent at right angles, the other end being covered by a fine meshed cloth, an

air blast and a receiving jar. The weighed portion of the sample is placed in the glass tube resting on the cloth in one end, this end being inserted in the blast pipe and the other in the receiving jar. The air blast is turned on and the light chaffy and inert material is blown over into the receiving jar, the heavier portion of the sample remaining in the tube. The final separation is made by placing the divided portion thus obtained on a white paper-covered table, especially made for this purpose, and by means of the eye and lenses separated into pure seed, foreign seed and inert matter as in the case of samples which do not require the preliminary air blast separation. These portions are weighed and the percentage of each estimated.

If the presence of dodder or Canada thistle is noted or suspected the complete sample is examined and the proportionate number of these seeds to the whole number of seeds is estimated.

Pure Seed:—Consists of the seeds under examination only. If for example, red clover is being tested for purity, the percentage of "pure seed" represents the amount of red clover seed present by weight in a given quantity.

Foreign Seed:—Includes the amount of all other seeds present which differ from the kind of seed under examination.

Inert Matter:—Includes all materials other than pure and foreign seeds, such as less than half parts of seeds, broken stems, dirt or any other foreign material.

Reports of the results obtained, together with other information concerning each sample, are made to the Secretary of Agriculture, to dealers from whom the samples were secured and to the seedsmen or growers where known.

OFFICIAL SEED SAMPLES OBTAINED BY SPECIAL AGENTS

Special Agents of the Department secured 202 samples of seeds from dealers in the State and after placing them in envelopes for this purpose sent them to the Laboratory to be tested for purity. Owing to the large number of special samples being sent in for examination, and to our being uncertain as to how much of this work would be required, and because of the fact that the work being new and the force of assistance small, it was not deemed advisable, during the first year of the enforcement of the Seed Law, to collect a large number of official samples or to employ more help. It is believed that the number secured and tested will give a fair idea of the character of seeds being sold in the State. In every case the average results were in excess of the standards required by the Law, and in the majority of cases these standards were considerably exceeded.

Of the 73 samples of red clover examined, only 4 were below the standard of 97 per cent. The highest test was 99.9 per cent. and the lowest was 95.4 per cent., the average being 98.9 per cent. Of the number of clover seed examined, 22 were guaranteed in most cases in excess of 97 per cent. Six of these were found to fall slightly below the guarantees but they exceeded the standard.

Only 1 crimson clover sample fell below the standard which was the lowest observed, being 95.8 per cent. the highest tested 99.6 per cent. and the average was 98.5 per cent.

None of the seeds of alfalfa ran below the standard. Two of the 20 samples tested were guaranteed. The highest test was 99.9 per cent. in 4 samples, the lowest was 98.0 per cent. the average being 99.6 per cent.

Of the 33 timothy grass samples, all but one, the lowest test being 96.5 per cent. were above, and in most cases, exceed the standard. The highest test was 99.7 per cent. and the average was 99.1 per cent. Five samples were guaranteed and all but one sustained.

The few samples of barley, wheat and oats received, were found to test above the requirements of the law. The barley averaged 98.3 per cent. the buckwheat averaged 99.3 per cent. and the oats 98.8 per cent.

The number of alsike clover samples tested was 30 and of these 4 were below the standard of 95 per cent. Four samples were guaranteed, all of which did not meet the guarantees, although they exceeded the standard. The highest test was 98.4 per cent., the lowest 89.1 per cent. the average being 96.5 per cent.

Three samples of perennial rye grass were examined, 2 of which fell below the standard. The average test being 95.9 per cent.

Six samples of German millet and 3 samples of Hungarian millet were tested, the results obtained showed the standards for millet to be exceeded. The average for the former was found to be 98.1 per cent. and in the latter case the average test was 97.5 per cent.

In the case of white clover, red top grass, orchard grass, Kentucky blue grass, only a few samples were secured and in all cases the average test met the standards for purity. In the case of orchard grass, however, 3 out of the 6 samples received fell below the 75 per cent. pure.

Dodder and Canada thistle were found present in 8 samples and in these cases the number did not exceed the number permitted of 1 seed in 3,000.

In the following Table (No. 11) will be found the results of the official samples of seeds collected by special agents. They have been arranged in the order in which they are named in the Law and show the percentage of pure seed, foreign seed, inert matter and the condition in respect to their freedom from dodder and Canada thistle.

Where two or more samples of the same kind of seed were tested an average of their purity has been made. The names and addresses of the growers or seedsmen, where known, and the names and addresses of the dealers from whom the samples were secured, are also included in alphabetical order for each kind of seed.

Table No. III shows the number of each kind of seed tested with the standard of purity and the average results obtained.

Table No. IV shows the number of times foreign seeds occurred in the official samples examined, together with their scientific and common names.

TABLE II—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1914.

Analyst's number.	Name of Seed and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed.		Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Found.	Guaranteed.				
			Per ct.	Per ct.	Per Ct.	Per ct.		
	RED CLOVER.							
A 11	..... J. H. Briggs, Tyrone, Pa., ...	Wait & McClain, Tyrone, ...	95.4	.....	1.8	2.8	.....	.....
A 85	Medium, J. J. Buffington & Co., Baltimore, Md., ...	Spanogle-Yeager Milling Co., Lewistown, ...	99.2	.....	0.6	0.2	.....	.....
A 31	..... Churchill Grain and Seed Co., Toledo, Ohio.	Bard Hardware Co., Reading, ...	99.5	.....	0.4	0.1	.....	.....
A 48	Lion Brand, Churchill Grain and Seed Co., Toledo, Ohio, ..	J. P. Bixler & Son, Carlisle, ...	99.1	99.5	0.5	0.4	.....	.....
A 12	Small, Churchill Grain and Seed Co., Toledo, Ohio, ...	Grazer Bros., Tyrone, ...	98.8	97.0	0.7	0.5	.....	.....
A 175	Medium, Churchill Grain and Seed Co., Toledo, Ohio, ...	Hudson & Kuhn, Greensburg, ...	99.9	.....	.....	0.1	.....	.....
A 22	Medium, Churchill Grain and Seed Co., Toledo, Ohio, ...	Strickler Hardware Co., Reading, ...	99.0	98.75	0.6	0.4	.....	.....
A 23	..... Churchill Grain and Seed Co.. Toledo, Ohio, ...	Strickler Hardware Co., Reading, ...	99.3	99.25	0.4	0.3	.....	.....
A 25	Mammoth, Churchill Grain and Seed Co., Toledo, Ohio, ...	Strickler Hardware Co., Reading, ...	99.4	99.25	0.3	0.3	.....	.....
A 197	Medium, Craver-Dickinson Seed Co., Buffalo, N. Y., ...	Chaapell Seed Store, Williamsport, ...	99.2	.....	0.2	0.6	.....	.....
A 198	Globe, Craver-Dickinson Seed Co., Buffalo, N. Y..	Chaapell Seed Store, Williamsport, ...	99.5	.....	0.2	0.3	.....	.....
A 199	"Pine Tree" Mammoth, Craver-Dickinson Seed Co., Buffalo, N. Y.	Chaapell Seed Store, Williamsport, ...	99.5	.....	0.3	0.2	.....	.....
A 2	Small, Craver-Dickinson Seed Co., Buffalo, N. Y., ...	H. L. Orr, Tyrone, ...	99.4	.....	0.5	0.1	.....	.....
A 83	Ace, Craver-Dickinson Seed Co., Buffalo, N. Y., ...	F. M. Snyder, Newport, ...	98.6	.....	0.7	0.7	.....	.....
A 180	..... L. K. Dale, Linden Hall, Pa., ...	John G. Dubbs, Bellefonte, ...	97.5	.....	2.4	0.1	.....	.....
A 46	Medium, The Albert Dickinson Co., Chicago, Ill., ...	Cochran & Alcock, Carlisle, ...	99.2	99.5	0.7	0.1	.....	.....
A 132	Medium, The Albert Dickinson Co.. Chicago, Ill., ...	H. J. Klingler & Co., Butler, ...	99.6	.....	0.3	0.1	.....	.....
A 134	Mammoth, The Albert Dickinson Co., Chicago, Ill., ...	H. J. Klingler & Co., Butler, ...	99.0	.....	0.7	0.3	.....	.....
A 149	Kaiser Brand, Medium, The Albert Dickinson Co., Chicago, Ill.	The Leedom & Worrall Co., Butler, Pa., ...	98.6	.....	1.3	0.1	.....	.....
A 113	Globe Brand, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	99.5	.....	0.3	0.2	.....	.....
A 115	Ace Brand Mammoth, The Albert Dickinson Co., Chicago, Ill.	John Thomas & Sons, Johnstown, ...	99.3	.....	0.5	0.2	.....	.....
A 116	Ace Brand, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	99.4	.....	0.2	0.4	.....	.....
A 176	Globe. The Albert Dickinson Co., Chicago. Ill., ...	J. S. Waite, Bellefonte, ...	99.4	99.44	0.5	0.1	.....	.....
A 166	Mammoth, S. W. Flower & Co., Toledo, Ohio, ...	Farmers Supply Co., New Castle, ...	99.56	.....	0.28	0.16	.....	.....
A 151	Mammoth, O. Gandy & Co., South Whitley, Ind., ...	The Leedom & Worrall Co., Butler, ...	97.8	.....	1.5	0.7	.....	.....
A 145	Mammoth, O. Gandy & Co., South Whitley, Ind., ...	C. H. Miller & Co., Butler, ...	98.8	.....	0.2	Trace.	.....	.....
A 61	Medium, Henry Hirsh, Toledo, Ohio, ...	Herr & Co., Lancaster, ...	99.3	99.70	0.3	0.4	.....	.....
A 66	Medium, Henry Hirsh, Toledo. Ohio, ...	Sprecher & Gauss, Lancaster, ...	99.5	.....	0.3	0.2	.....	.....
A 91	..... Holmes Seed Co., Harrisburg, Pa., ...	Holmes Seed Co., Harrisburg, ...	98.4	99.25	1.2	0.4	.....	.....
A 102	Medium, The Illinois Seed Co., Chicago, Ill., ...	B. F. Fink, Huntingdon, ...	99.4	.....	0.2	0.4	.....	.....
A 159	Medium, Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	98.0	.....	1.6	0.4	.....	.....

TABLE II—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1914—Continued.

Analyst's number.	Name of Seed and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed.		Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Found.	Guaranteed.				
			Per ct.	Per ct.	Per Ct.	Per ct.		
A 160	Mammoth, Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	98.4	.....	1.3	0.3	.....	.....
A 170	Mammoth, Kelly Seed Co., Cleveland, Ohio, ...	Smith, Daggett, Kurtz Co., New Castle, ...	97.9	.....	0.5	0.6	.....	.....
A 125	Mammoth, J. Chas. McCullough Seed Co., Cincinnati, Ohio.	Frank Koch & Son, Butler, ...	99.5	.....	0.2	0.3	.....	.....
A 126	Medium, J. Chas. McCullough Seed Co., Cincinnati, Ohio,	Frank Koch & Son, Butler, ...	99.5	.....	0.2	0.3	.....	.....
A 51	..... Paxton Flour and Feed Co., Harrisburg, Pa., ...	Paxton Flour and Feed Co., Carlisle, ...	99.3	.....	0.6	0.1	.....	.....
A 60	Medium, Paxton Flour and Feed Co., Harrisburg, Pa., ...	Paxton Flour and Feed Co., Mechanicsburg, ..	99.3	99.0	0.5	0.2	.....	.....
A 43	Medium, Paxton Flour and Feed Co., Harrisburg, Pa., ...	F. E. Thompson, Carlisle, ...	98.9	98.0	0.7	0.4	.....	.....
A 45	..... Paxton Flour and Feed Co., Harrisburg, Pa., ...	The Wagner Hardware Co., Carlisle, ...	98.5	98.0	1.0	0.5	.....	.....
A 99	Medium, W. A. Simpson & Co., Baltimore, Md., ...	John G. Simpson, Huntingdon, ...	99.2	.....	0.6	0.2	.....	.....
A 100	Mammoth, W. A. Simpson & Co., Baltimore, Md., ...	John G. Simpson, Huntingdon, ...	99.2	.....	0.5	0.3	.....	.....
A 172	..... W. A. Simpson & Co., Baltimore, Md., ...	Temple & Sons, Greensburg, ...	99.2	.....	0.4	0.4	.....	.....
A 144	Medium, W. H. Small & Co., Evansville, Ind., ...	C. H. Miller & Co., Butler, ...	98.5	.....	0.7	0.8	.....	.....
A 128	Medium, W. H. Small & Co., Evansville, Ind., ...	G. Wilson Miller Co., Butler, ...	99.82	.....	0.13	0.05	.....	.....
A 129	Mammoth, W. H. Small & Co., Evansville, Ind., ...	G. Wilson Miller Co., Butler, ...	96.3	.....	2.7	1.0	Trace.	.....
A 7	Small, W. H. Small & Co., Evansville, Ind., ...	Waite & McClain, Tyrone, ...	96.9	.....	2.1	1.0	.....	.....
A 8	Mammoth, W. H. Small & Co., Evansville, Ind., ...	Waite & McClain, Tyrone, ...	99.7	.....	0.2	0.1	.....	.....
A 53	Medium, J. B. Spera, Dillsburg, Pa., ...	J. H. Koller, Mechanicsburg, ...	99.4	.....	0.3	0.3	.....	.....
A 42	..... J. B. Spera, Dillsburg, Pa., ...	F. E. Thompson, Carlisle, ...	99.0	98.50	0.5	0.5	.....	.....
A 44	..... J. B. Spera, Dillsburg, Pa., ...	Wagner & Boyer, Carlisle.	98.2	98.50	1.2	0.6	.....	.....
A 130	Mammoth, Toledo Field Seed Co., Toledo, Ohio, ...	B. F. Shannon & Co., Butler, ...	99.5	.....	0.3	1.2	.....	.....
A 131	Medium, Toledo Field Seed Co., Toledo, Ohio, ...	B. F. Shannon & Co., Butler, ...	99.6	.....	0.2	0.2	.....	.....
A 203	Eureka Brand, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	E. M. Bates, Williamsport, ...	99.8	99.50	0.2	Trace.	.....	.....
A 41	Eureka Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y.	S. B. Jackson, Carlisle, ...	99.6	99.0	0.1	0.3	.....	.....
A 183	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Joseph Brothers, Bellefonte, ...	99.4	99.0	0.5	0.1	.....	.....
A 81	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	W. H. Kepner, Newport, ...	97.2	.....	2.5	0.3	.....	.....
A 133	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	H. J. Klingler & Co., Butler, ...	98.3	.....	0.7	1.0	.....	.....
A 135	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y., ..	H. J. Klingler & Co., Butler, ...	98.0	.....	1.4	0.6	.....	.....
A 105	Eureka, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	C. H. Miller Hardware Co., Huntiugdon, ...	99.4	.....	0.1	0.5	.....	.....
A 106	Pan American, Whitney-Eckstein Seed Co., Buffalo, N. Y.,	C. H. Miller Hardware Co., Huntingdon, ...	99.0	.....	0.8	0.2	.....	.....
A 80	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Reilly Bros. & Raub, Lancaster, ...	99.2	.....	0.5	0.3	.....	.....
A 153	Medium, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	P. Wagner & Son, New Castle, ...	96.7	.....	2.8	0.5	.....	.....
A 154	Mammoth, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	P. Wagner & Son, New Castle, ...	97.0	.....	2.6	0.4	.....	.....
A 182	..... Whitney-Noyes Seed Co., Buffalo, N. Y., ...	John G. Dubbs, Bellefonte, ...	99.8	99.50	0.1	0.1	.....	.....

A 187	..... Whitney-Noyes Seed Co., Buffalo, N. Y., ...	Kline & Co., Williamsport, ...	99.2	99.0	0.6	0.2	.....	.....
A 193	Mammoth, Whitney-Noyes Seed Co., Buffalo, N. Y., ...	Kline & Co., Williamsport, ...	99.6	.....	0.3	0.1	.....	.....
A 57	B. B. Brand Medium, Whitney-Noyes Seed Co., Buffalo, N. Y.	Miller & Eurich, Mechanicsburg, ...	98.7	99.50	0.3	Trace.	.....	.....
A 58	Elk Brand, Whitney-Noyes Seed Co., Buffalo, N. Y., ...	Miller & Eurich, Meehaniesburg, ...	98.9	.....	0.8	0.3	.....	.....
A 37	Ava Brand, Whitney-Noyes Seed Co., Buffalo, N. Y., ...	John H. Olbold & Co., Reading, ...	98.2	97.0	1.5	0.3	.....	.....
A 39	Elk Brand, Whitney-Noyes Seed Co., Buffalo, N. Y., ...	John H. Olbold & Co., Reading, ...	99.8	97.0	—0	.2—	.....	.....
A 19	..... Unknown, ...	M. L. Bachman, Lebanon, ...	98.0	.....	1.7	0.3	.....	.....
A 17	..... Unknown, ...	Lebanon Hardware Co., Lebanon, ...	98.3	.....	1.3	0.4	.....	.....
A 15	Medium, uuknown, ...	A. M. Welmer, Lebanon, ...	98.7	.....	1.1	0.2	.....	.....
		Average, ...	98.9		0.7	0.4		
	CRIMSON CLOVER.							
A 35	..... H. W. Denghlen. New York, N. Y., ...	H. L. Hertzog, Reading, ...	95.8	.....	1.4	2.8	.....	.....
A 94	..... Holmes Seed Co., Harrisburg, Pa., ...	Holmes Seed Co., Harrisburg, ...	99.6	.....	0.3	0.1	.....	.....
A 88	..... W. A. Simpson & Co., Baltimore, Md., ...	Spanogle-Yeager Milling Co., Lewistown, ...	98.7	.....	0.2	1.1	.....	Trace.
A 54	..... H. A. Surface, Mechanicsburg, Pa., ...	Miller & Eurich, Mechanicsburg, ...	98.7	.....	0.4	0.9	.....	.....
A 136	..... T. W. Wood & Sons, Richmond, Va., ...	H. J. Klingler & Co., Butler, ...	98.4	.....	0.2	1.4	.....	.....
A 194	..... Unknown, ...	Kline & Co., Williamsport, ...	99.2	.....	0.6	0.2	.....	.....
A 76	..... Unknown, ...	Sprecher & Ganss, Lancaster, ...	99.0	.....	0.6	0.4	.....	.....
		Average, ...	98.5		0.5	1.0		
	ALFALFA.							
A 34	..... Blackman & Grahart & Co., Ogden, Utah, ...	H. L. Hertzog, Reading, ...	99.7	.....	—0	.3—	.....	.....
A 201	Utah, Blackman & Groff, Ogden, Utah, ...	E. M. Bates, Williamsport, ...	99.4	.....	0.2	0.4	.....	.....
A 62	..... Churchill Grain and Seed Co., Toledo, Ohio, ...	Herr & Co., Lancaster, ...	99.9	.....	—0	.1—	.....	.....
A 4	..... Churchill Grain and Seed Co., Toledo, Ohio, ...	H. L. Orr, Tyrone, ...	99.8	.....	0.0	0.2	.....	.....
A 50	..... E. W. Conklin & Son, Binghamton, N. Y., ...	J. P. Bixler & Son, Carlisle, ...	98.0	.....	0.7	1.3	.....	.....
A 67	..... The Albert Dickinson Co., Chicago, Ill., ...	Sprecher & Ganss, Lancaster, ...	99.5	.....	0.1	0.4	.....	.....
A 117	Pine Tree, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	99.9	.....	0.0	0.1	.....	.....
A 92	..... Holmes Seed Co., Harrisburg, Pa., ...	Holmes Seed Co., Harrisburg, ...	99.8	99.25	0.0	0.2	.....	.....
A 161	..... Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	99.5	.....	0.3	0.2	.....	.....
A 89	..... W. A. Scarlett & Co., Baltimore, Md., ...	Spanogle-Yeager Milling Co., Lewistown, ...	99.7	.....	0.1	1.2	.....	.....
A 10	..... W. H. Small & Co., Evansville, Ind., ...	Waite & McClain, Tyrone.	99.7	.....	0.0	0.3	.....	.....
A 167	..... Stanford Seed Co., Buffalo, N. Y., ...	Farmers Supply Co., New Castle, ...	99.8	.....	0.0	0.2	.....	.....
A 191	..... Whitney-Eckstein Seed Co., Buffalo, N.	Chaapell Seed Store, Williamsport, ...	99.5	.....	Trace.	0.5	.....	.....
A 104	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	B. F. Fink, Huntingdon, ...	99.9	.....	—0	.1—	.....	.....
A 137	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	H. J. Klingler & Co., Butler, ...	99.8	.....	0.0	0.2	.....	.....
A 107	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	C. H. Miller Hardware Co., Huntingdon, ...	99.5	.....	Trace.	0.5	.....	.....
A 155	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	P. Wagner & Son, New Castle, ...	99.6	.....	0.1	0.3	.....	.....
A 186	..... Whitney-Noyes & Co., Buffalo, N. Y., ...	Kline & Co., Williamsport, ...	99.5	.....	0.4	0.1	.....	.....
A 56	..... Whitney-Noyes & Co., Buffalo, N. Y., ...	Miller & Eurich. Mechanicsburg, ...	99.8	.....	—0	.2—	.....	.....
A 38	..... Whitney-Noyes & Co., Buffalo, N. Y., ...	John H. Olbold & Co., Reading, ...	99.9	97.0	—0	.1—	.....	.....
		Average, ...	99.6		0.1	0.3		
	TIMOTHY GRASS.							
A 205	..... Blamberg Bros., Inc., Baltimore, Md., ...	John W. McIlbenny, Gettysburg, ...	99.85	99.68	0.11	0.04	.....	.....
A 59	Pine Tree Brand, Craver-Dickinson Seed Co., Buffalo, N. Y.	Miller & Eurich, Mechanisburg, ...	99.5	.....	0.2	0.3	.....	.....

TABLE II—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1914—Continued.

	Name of Seed and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed.		Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Found.	Guaranteed.				
			Per et.	Per et.	Per Ct.	Per et.		
A 82	Pine Tree, Craver-Dickinson Seed Co., Buffalo, N. Y., ...	F. M. Snyder, Newport.	99.6	.....	0.1	0.3	.....	.....
A 139	..... The Albert Dickinson Co., Chicago, Ill., ...	H. J. Klingler & Co., Butler, ...	99.1	.....	0.5	0.4	.....	.....
A 148	Bison, The Albert Dickinson Co., Chicago, Ill., ...	The Leedom & Worrall Co., Butler, ...	98.2	.....	1.0	0.8	.....	.....
A 68	Pine Tree, The Albert Dickinson Co., Chicago, Ill., ...	Sprecher & Ganss, Lancaster, ...	99.6	.....	0.1	0.3	.....	.....
A 26	..... The Albert Dickinson Co., Chicago, Ill., ...	Strickler Hardware Co., Reading, ...	99.4	98.50	0.4	0.2	.....	.....
A 119	Pine Tree, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	99.4	.....	0.3	0.3	.....	.....
A 120	Bison Brand, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	97.7	.....	1.0	1.3	.....	.....
A 5	..... The Albert Dickinson Co., Chicago, Ill., ...	Waite & McClain, Tyrone, ...	99.6	.....	0.2	0.2	.....	.....
A 163	..... Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	99.6	.....	0.1	0.3	.....	.....
A 171	..... Kelly Seed Co., Cleveland, Ohio, ...	Smith, Daggett, Kurtz Co., New Castle, ...	98.4	.....	0.8	0.8	.....	.....
A 124	..... J. Chas. McCullough Seed Co., Cincinnati, Ohio, ..	Frank Koch & Son, Butler, ...	99.4	.....	0.1	0.5	.....	.....
A 32	..... Noble Brothers, Gibson City. Ill., ...	Bard Hardware Co., Reading, ...	98.7	.....	0.8	0.5	.....	.....
A 146	..... W. H. Small & Co., Evansville, Ind., ...	C. H. Miller & Co., Butler, ...	99.0	.....	0.8	0.2	.....	.....
A 152	Eclipse. W. H. Small & Co., Evansville, Ind., ...	George Walter & Sons, Butler, ...	99.7	.....	0.2	0.1	.....	.....
A 204	..... H. H. Smyser, York, Pa., ...	A. B. Harnish, Mechanicsburg, ...	99.0	99.05	0.7	0.3	.....	.....
A 169	..... Stanford Seed Co., Buffalo, N. Y., ...	Farmers Supply Co., New Castle, ...	99.4	.....	0.2	0.4	.....	.....
A 1	..... Western Seed Co., Buffalo, N. Y., ...	H. L. Orr, Tyrone, ...	99.3	.....	0.3	0.4	.....	.....
A 200	Pan-American, Whitney-Eckstein Seed Co., Buffalo, N. Y.	E. M. Bates, Williamsport, ...	97.8	99.50	1.1	1.1	.....	.....
A 110	Pan-American Re-cleaned, Whitney-Eckstein Seed Co., Buffalo, N. Y.	C. H. Miller Hardware Co., Huntingdon, ...	98.0	.....	1.2	0.8	.....	.....
A 127	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	G. Wilson Miller, Butler, ...	99.5	.....	0.3	0.2	.....	.....
A 173	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Temple & Sons, Greensburg, ...	98.0	.....	1.2	0.8	.....	.....
A 157	..... Whitney-Eckstein Seed Co., Buffalo, N. Y..	P. Wagner & Son, New Castle, ...	98.0	.....	1.0	1.0	.....	.....
A 179	Bone, Whitney-Noyes Co., Buffalo, N. Y., ...	John G. Dubbs, Bellefonte, ...	99.6	99.50	0.1	0.3	.....	.....
A 65	..... Whitney-Noyes Co., Buffalo, N. Y., ...	Herr & Co., Lancaster, ...	99.4	.....	0.3	0.3	.....	.....
A 188	..... Whitney-Noyes Co., Buffalo, N. Y., ...	Kline & Co., Williamsport, ...	99.3	.....	0.3	0.4	.....	.....
A 178	..... Whitney-Noyes Co., Buffalo, N. Y., ...	J. S. Waite, Bellefonte, ...	99.5	.....	0.2	0.3	.....	.....
A 185	..... Unknown, ...	Gohl & King, Williamsport, ...	99.4	.....	0.2	0.4	.....	.....
A 13	..... Unknown, ...	Grazer Bros., Tyrone, ...	98.9	.....	0.4	0.7	.....	.....
A 86	..... Unknown, ...	Spangle-Yeager Milling Co., Lewistown, ...	96.5	.....	2.1	1.4	.....	.....
A 6	..... Unknown, ...	Waite & McClain, Tyrone, ...	99.5	.....	0.4	0.1	.....	.....
A 16	..... Unknown, ...	A. M. Welmer, Lebanon, ...	99.2	.....	0.3	0.5	.....	.....
		Average, ...	99 0		0.5	0.5		

	BARLEY.							
A 121	..... The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	99.5	.....	0.5	Trace.	.....	.....
A 111	Six Row, Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	C. H. Miller Hardware Co., Huntingdon, ...	97.1	.....	2.5	0.4	.....	.....
		Average, ...	98.3		1.5	0.2		
	BUCKWHEAT.							
A 93	..... Holmes Seed Co., Harrisburg, Pa., ...	Holmes Seed Co., Harrisburg, ...	99.9	.....	0.0	0.1	.....	.....
A 140	..... H. J. Klingler & Co., Butler, Pa., ...	H. J. Klingler & Co., Butler, ...	99.0	.....	0.4	0.6	.....	.....
A 69	..... Unknown.	Sprecher & Ganss, Lancaster, ...	99.0	.....	0.1	0.9	.....	.....
		Average, ...	99.3		0.2	0.5		
	OATS.							
A 70	Purisco, The Albert Dickinson Co., Chicago, Ill., ...	Sprecher & Ganss, Lancaster, ...	99.98	... .	0.0	0.02	.....	.....
A 158	Seed, Richards & Evans, Cortland, Ohio, ...	P. Wagner & Son, New Castle, ...	98.0	.....	0.5	1.5	.....	.....
A 147	..... W. H. Small & Co., Evansville, Ind., ...	C. H. Miller & Co., Butler, ...	98.2	.....	0.2	1.6	.....	.....
A 112	Canada Cluster, Whitney-Eckstein Seed Co., Buffalo, N. Y.	C. H. Miller Hardware Co., Huntingdon, ...	99.0	.....	0.4	0.6	.....	.....
		Average, ...	98.8		0.3	0.9		
	ALSIKE CLOVER.							
A 49	..... Churchill Grain and Seed Co., Toledo, Ohio, ...	J. P. Bixler & Son, Carlisle, ...	97.5	99.50	2.1	0.4	.....	.....
A 3	..... Churchill Grain and Seed Co., Toledo, Ohio, ...	H. L. Orr, Tyrone, ...	98.2	.....	1.5	0.3	.....	.....
A 24	..... Churchill Grain and Seed Co., Toledo, Ohio, ...	Strickler Hardware Co., Reading, ...	96.2	99.0	3.2	0.6	.....	.....
A 196	..... Craver-Dickinson Seed Co., Buffalo, N. Y., ...	Chappell Seed Store, Williamsport, ...	97.0	.....	2.6	0.4	.....	.....
A 47	..... The Albert Dickinson Co., Chicago, Ill., ...	Cochran & Alcock, Carlisle, ...	97.6	99.50	1.9	0.5	.....	.....
A 114	Ace Brand, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	98.1	.....	1.6	0.3	.....	.....
A 177	..... The Albert Dickinson Co., Chicago, Ill., ...	J. S. Waite, Bellefonte, ...	97.0	.....	2.6	0.4	.....	.....
A 33	..... Ewart & Lake, ...	Bard Hardware Co., Reading, ...	97.4	.....	2.1	0.5	.....	.....
A 63	..... Henry Hirsh, Toledo, Ohio, ...	Herr & Co., Lancaster, ...	98.1	.....	1.1	0.8	.....	.....
A 95	..... Holmes Seed Co., Harrisburg, Pa., ...	Holmes Seed Co., Harrisburg, ...	91.2	.....	7.8	1.0	.....	Trace.
A 96	..... Holmes Seed Co., Harrisburg, Pa., ...	Holmes Seed Co., Harrisburg, ...	96.0	.....	3.0	1.0	.....	.....
A 162	..... Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	95.2	.....	4.1	0.7	.....	.....
A 84	..... W. G. Scarlett & Co., Baltimore, Md., ...	Spanogle-Yeager Milling Co., Lewistown, ..	98.2	.....	1.8	Trace.	.....	Trace.
A 101	..... W. A. Simpson & Co., Baltimore, Md., ...	John G. Simpson, Huntingdon, ...	97.3	.....	1.8	0.9	.....	.....
A 150	..... W. H. Small & Co., Evansville, Ind., ...	The Leedom & Worrall Co., Butler, ...	89.1	.....	9.9	1.0	.....	Trace.
A 9	..... W. H. Small & Co., Evansville, Ind., ...	Waite & McLain, Tyrone, ...	97.8	.....	1.4	0.8	.....	.....
A 168	..... Stanford Seed Co., Buffalo, N. Y., ...	Farmers Supply Co., New Castle, ...	96.6	.....	0.5	2.9	.....	Trace.
A 138	..... Stanford Seed Co., Buffalo, N. Y., ...	H. J. Klingler & Co., Butler, ...	97.7	.....	1.9	0.4	.....	.....
A 202	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	E. M. Bates, Williamsport, ...	97.4	.....	2.1	0.5	.....	.....
A 103	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	B. F. Fink, Huntingdon, ...	96.2	.....	3.4	0.4	.....	.....
A 108	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	C. H. Miller Hardware Co., Huntingdon, ...	97.9	.....	1.7	0.4	.....	.....
A 75	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Sprecher & Ganss, Lancaster, ...	96.2	.....	3.3	0.5	.....	.....
A 156	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	P. Wagner & Son, New Castle, ...	95.0	.....	4.3	0.7	.....	.....
A 181	..... Whitney-Noyes Co., Buffalo, N. Y., ...	John G. Dubbs, Bellefonte, ...	97.8	99.50	1.6	0.6	.....	.....
A 190	..... Whitney-Noyes Co., Buffalo, N. Y., ...	Kline & Co., Williamsport, ...	95.7	.....	3.4	0.9	.....	.....
A 55	..... Whitney-Noyes Co., Buffalo, N. Y., ...	Miller & Eurich, Mechanicsburg, ...	98.4	.....	1.3	0.3	.....	.....

TABLE II—RESULTS OF TESTS ON SAMPLES COLLECTED IN 1914—Continued.

	Name of Seed and Name and Address of Grower or Seedsman.	Name and Address of Dealer.	Pure Seed.		Foreign seed.	Inert matter.	Seeds of dodder.	Seeds of Canada thistle.
			Found.	Guaranteed.				
			Per ct.	Per ct.	Per Ct.	Per ct.		
A 20	..... Unknown, ...	M. L. Bachman, Lebanon, ...	94.3	.....	4.8	0.9	.....	.....
A 184	..... Unknown, ...	Joseph Brothers, Bellefonte, ...	98.0	.....	0.1	1.9	.....	.....
A 18	..... Unknown, ...	Lebanon Hardware Co., Lehanon, ...	96.7	.....	2.6	0.7	.....	.....
A 14	..... Unknown, ...	A. M. Welmer, Lehanon, ...	93.8	.....	5.4	0.8	.....	1-37,000
		Average, ...	96.5		2.8	0.7		
	PERENNIAL RYE GRASS.							
A 74	..... The Albert Dickinson Co., Chicago, Ill., ...	Sprecher & Ganss, Lancaster, ...	98.7	.....	1.1	0.2	.....	.....
A 164	..... Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle, ...	94.6	.....	2.8	2.6	.....	.....
A 141	..... Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	H. J. Klingler & Co., Butler, ...	94.3	.....	2.7	3.0	.....	.....
		Average, ...	95.9		2.2	1.9		
	GERMAN MILLET.							
A 78	..... The Albert Dickinson Co., Chicago, Ill., ...	Steinman Hardware Co., Lancaster, ...	98.7	.....	0.9	0.4	.....	.....
A 122	..... The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	99.1	.....	0.7	0.2	.....	.....
A 98	..... Holmes Seed Co., Harrishurg, Pa., ...	Holmes Seed Co., Harrishurg, ...	99.3	.....	0.3	0.4	.....	.....
A 71	..... W. G. Scarlett, Baltimore, Md., ...	Sprecher & Ganss, Lancaster, ...	95.7	.....	3.0	1.3	.....	.....
A 142	..... The Stanford Seed Co., Buffalo, N. Y., ...	H. J. Kliugler & Co., Butler, ...	96.6	.....	2.3	1.1	.....	.....
A 189	..... Whitney-Noyes & Co., Buffalo, N. Y., ...	Kline & Co., Williamsport, ...	99.02	.....	0.74	0.24	.....	.....
		Average, ...	98.1		1.3	0.6		
	HUNGARIAN MILLET.							
A 97	..... Holmes Seed Co., Harrishurg, Pa., ...	Holmes Seed Co., Harrishurg, ...	98.4	.....	1.3	0.3	.....	.....
A 72	..... W. G. Scarlett, Baltimore, Md., ...	Sprecher & Ganss, Lancaster, ...	95.3	.....	3.4	1.3	.....	.....
A 52	..... Unknown, ...	A. B. Harnish, Mechanicshurg, ...	98.9	.....	0.5	0.6	.....	.....
		Average, ...	97.5		1.7	0.8		

		WHITE CLOVER.							
A 79	.....	The Albert Dickinson Co., Chicago, Ill., ...	Steinman Hardware Co., Lancaster, Pa., ...	96.9	.....	3.1	1.0	.....	Trace.
A 30	.....	The Albert Dickinson Co., Chicago, Ill., ...	Strickler Hardware Co., Reading, Pa., ...	95.2	93.0	3.3	1.5	.....	.....
A 118		Ace Brand, The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	95.2	.....	3.9	0.9	.....	.....
A 64	.....	Henry Hirsh, Toledo, Ohio, ...	Herr & Co., Lancaster, ...	91.2	.....	7.2	1.6	Trace.	.....
A 90	.....	Holmes Seed Co., Harrisburg, Pa., ...	G. W. Sheary, Lewistown, ...	97.0	.....	2.0	1.0	.....	.....
A 87	.....	W. G. Scarlett & Co., Baltimore, Md., ...	Spanogle-Yeager Milling Co., Lewistown, ...	98.9	.....	1.1	0.0	.....	.....
A 77	.....	W. H. Small & Co., Evansville, Ind., ...	Sprecher & Ganss, Lancaster.	96.1	.....	2.8	1.1	.....	.....
A 109	.....	Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	C. H. Miller Hardware Co., Huntingdon, ...	95.6	.....	3.5	0.9	.....	.....
A 174	.....	Whitney-Eckstein Seed Co., Buffalo, N. Y., ...	Temple & Sons, Greensburg, ...	89.0	.....	9.5	1.5	.....	.....
			Average, ...	94.9		4.0	1.1		
		RED TOP GRASS.							
A 192	.....	Craver-Dickinson Seed Co., Buffalo, N. Y., ...	Chaapell Seed Store, Williamsport, ...	91.1	.....	0.4	8.5	.....	.....
A 28	.....	The Albert Dickinson Seed Co., Chicago, Ill., ...	Strickler Hardware Co., Reading, ...	88.7	87.0	0.3	11.0	.....	.....
			Average, ...	89.9		0.4	9.7		
		ORCHARD GRASS.							
A 73	.....	The Albert Dickinson Co., Chicago, Ill., ...	Sprecher & Ganss, Lancaster, ...	74.8	.....	0.5	24.7	.....	.....
A 27	.....	The Albert Dickinson Co., Chicago, Ill., ...	Strickler Hardware Co., Reading, ...	83.5	82.0	1.0	15.5	.....	.....
A 123	.....	The Albert Dickinson Co., Chicago, Ill., ...	John Thomas & Sons, Johnstown, ...	74.2	.....	1.4	24.4	.....	.....
A 165	.....	Kelly Seed Co., Cleveland, Ohio, ...	New Castle Hardware Co., New Castle.	74.9	.....	1.5	23.6	.....	.....
A 143	.....	J. Chas. McCullough Seed Co., Cincinnati, Ohio, ..	H. J. Klingler & Co., Butler, ...	82.3	.....	1.4	16.3	.....	.....
A 36	.....	Whitney-Noyes & Co., Buffalo, N. Y., ...	John H. Olbold & Co., Reading, ...	80.0	.....	3 1	16.9	.....	.....
			Average, ...	78.3		1.5	20.2		
		KENTUCKY BLUE GRASS.							
A 29	.....	The Albert Dickinson Seed Co., Chicago, Ill., ...	Strickler Hardware Co., Reading, ...	82.3	81.0	0.5	17.2	.....	.....

TABLE III—AVERAGE PURITY OF OFFICIAL SAMPLES.

Name of Seed.	Number of samples.	Standard of purity.	Pure seed.	Foreign seed.	Inert matter.
		Per ct.	Per ct.	Per ct.	Per ct.
Red clover,	73	97	98.9	0.7	0.4
Crimson clover,	7	97	98.5	0.5	1.0
Alfalfa,	20	97	99.6	0.1	0.3
Timothy grass,	33	97	99.1	0.5	0.4
Barley,	2	97	98.3	1.5	0.2
Buckwheat,	3	97	99.3	0.2	0.5
Oats,	4	97	98.8	0.3	0.9
Alsike clover,	30	95	96.5	2.8	0.7
Perennial rye grass,	3	95	95.9	2.2	1.9
German millet,	6	95	98.1	1.3	0.6
Hungarian millet,	3	95	97.5	1.7	0.8
White clover,	9	90	94.9	4.0	1.1
Red Top grass (hulled),	2	85	89.9	0.4	9.7
Orchard grass,	6	75	78.3	1.5	20.2
Kentucky blue grass,	1	75	82.3	0.5	17.2
Total,	202	.....	.....	.....	.....

TABLE NO. IV—SHOWING OCCURRENCE OF FOREIGN SEEDS IN 202 OFFICIAL SAMPLES.

NUMBER OF SAMPLES EXAMINED.		30	20	2	3	7	6	3	1	4	6	73	3	2	33	9
NAMES OF.		Alsike clover.	Alfalfa.	Barley.	Buckwheat.	Crimson clover.	German millet.	Hungarian millet.	Kentucky bluegrass.	Oats.	Orchard grass.	Red clover.	Rye grass.	Red top.	Timothy.	White clover.
FOREIGN SEEDS.		Number of Times Occurring.														
Scientific Name.	Common Name.															
Acalypha virginica.	Three-seeded mercury,	1										1				
Achillea millefolium,	Yarrow,										1			2	1	
Agrostis alba,	Redtop,	5				1					1	7			23	3
Alsine graminea,	Lesser starwort,															4
Alsine media,	Chickweed,					1										5
Amaranthus graecizans,	Tumbling amaranth,						1	1				2			2	
Amaranthus retroflexus,	Rough pigweed,						2	1				5			2	
Ambrosia artemisiaefolia,	Ragweed,				1		2					7				
Anagallis arvensis,	Red pimpernel,											1				
Anthemis arvensis,	Field camomile.	1										1	1			
Anthemis cotula,	Mayweed,	1										3	1		3	
Anthoxanthum odoratum,	Sweet vernal grass,												1			1
Anthyllis vulneraria,	Kidney vetch,					1						2				
Arctium lappa,	Burdock,											1				
Arenaria serpyllifolia,	Thyme-leaved sandwort,										1					1
Avena sativa,	Oats,				1											
Barbarea barbarea,	Winter cress,	5													3	1
Brassica sp.,	Mustard,					2										
Bromus secalinus.	Chess,										2		2			
Bursa bursa-pastoris,	Shepherd's purse,											1				

TABLE NO. IV—SHOWING OCCURRENCE OF FOREIGN SEEDS IN 202 OFFICIAL SAMPLES—Continued.

NUMBER OF SAMPLES EXAMINED.		30	20	2	3	7	6	3	1	4	6	73	3	2	33	9
NAMES OF.		Alsike clover.	Alfalfa.	Barley.	Buckwheat.	Crimson clover.	German millet.	Hungarian millet.	Kentucky bluegrass.	Oats.	Orchard grass.	Red clover.	Rye grass.	Red top.	Timothy.	White clover.
FOREIGN SEEDS.		Number of Times Occurring.														
Scientific Name.	Common Name.															
Camelina microcarpa,	Small seeded false flax,	2					1								1	
Camelina sativa,	Large seeded false flax,	1				2										
Carduus arvensis,	Canada thistle,	2														1
Carduus lanceolatus,	Bull thistle,											1				
Carex sp.,	Sedge,	2							1		6	1		2	9	
Centaurea cyanus,	Blue bottle,		1			1										
Centaurea solstitialis,	Yellow centaurea,					1										
Cerastium vulgatum,	Mouse-ear chickweed,	12													1	5
Chaetochloa glauca,	Yellow foxtail,		2		1		5	3				5				
Chaetochloa italica,	Millet,		2								1	2				
Chaetochloa viridis,	Green foxtail,	1	5				5	3		1		52			2	
Chenopodium album,	Lamb's-quarters,	4	3				2	2				12			5	4
Chenopodium ambrosioides,	Mexican tea,														1	
Chenopodium fremontii,	Freemont's goose-foot,							1								
Chrysanthemum leucanthemum,	Ox-eye daisy,	5									2				1	
Cichorium intybus,	Chicory,		2									2				
Conringia orientalis,	Hare's-ear mustard,					1						1				
Cuscuta sp.,	Dodder,											1				2
Cynosurus cristatus,	Crested dog's tail,					1							1			
Dactylis glomerata,	Orchard grass,					1						1	1			

Daucus carota,	Wild carrot,	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	10	.....	.....	.....	.....
Echinochloa crus-galli,	Barnyard grass,	.....	2	.....	.....	.....	4	4	.....	.....	.....	4	.....	.....	.....	.....
Epilobium paniculatum,	Panicled willow herb, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Erechtites hieraeifolia,	Fireweed,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Erodium cicutarium,	Alfilaria,	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erysimum cheiranthoides,	Wormseed mustard, ...	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Euphorbia nutans,	Spurge,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....
Fagopyrum Fagopyrum,	Buckwheat,	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Festuca elatior pratensis,	Meadow fescue-grass, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	1	.....
Galium sp.,	Cleavers,	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Geranium dissectum,	Cut-leaved crane's bill, ..	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Geranium pusillum,	Small-flowered crane's bill,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
Gnaphalium sp.,	Sweet everlasting, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Grindelia squarrosa,	Gumweed,	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gramineae sp.,	Grass species,	.....	.....	.....	.....	2	.....	.....	.....	.....	2	4	.....	.....	1	2
Hedeoma pulegioides,	Pennyroyal.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Holcus lanatus,	Velvet grass, ...	1	.....	.....	.....	.....	2	.....	.....	.....	.....	1	.....	.....	.....	.....
Hordeum vulgare,	Barley,	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
Juncus tenuis,	Slender rush, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	2	.....	.....
Lapsana communis,	Nipplewort.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Leontodon autumnale,	Fall dandelion, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Lepidium apetalum,	Peppergrass, ...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Lepidium draba,	Hoary cress, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17	.....
Lepidium virginicum,	Pepper grass, ...	1	.....	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	.....
Lithospermum arvense,	Corn gromwell, ...	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Linum usitatissimum,	Flaxseed, ...	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lolium perenne,	Perennial rye grass, ...	.....	.....	.....	.....	.....	1	.....	.....	.....	2	2	.....	.....	.....	.....
Lolium temulentum,	Darnel, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Lotus americana,	Prairie bird's foot, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Malva rotundifolia,	Mallow, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Medicago arab. and dent.,	Bur clover, ...	.....	1	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medicago lupulina,	Trefoil, ...	23	2	.....	.....	3	.....	.....	.....	.....	.....	8	.....	.....	.....	6
Medicago sativa,	Alfalfa, ...	1	.....	.....	.....	1	.....	.....	.....	.....	.....	13	1	.....	.....	.....
Melilotus alba,	Sweet clover, ...	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....
Myosotis arvensis,	Forget-me-not, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2
Nepeta cataria,	Catmint.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	2
Neslia paniculata,	Ball mustard, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Onagra biennis,	Evening primrose, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Panicum capillare,	Witch grass, ...	28	2	.....	.....	1	.....	.....	.....	.....	5	53	.....	1	2	5
Panicum sp..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	1	.....	.....	4	2
Phalaris canariensis,	Canary seed, ...	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phleum pratense.	Timothy, ...	1	.....	.....	.....	.....	2	3	.....	.....	.....	2	.....	.....	.....	.....
Plantago aristata,	Bracted plantain, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Plantago lanceolata,	Buckhorn plantain, ...	11	1	.....	.....	2	.....	.....	.....	.....	3	51	2	.....	3	4
Plantago major,	Plantain.	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2	3
Plantago rugelii,	Rugel's plantain, ...	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	44	.....	1	13	6
Poa-sp.,	Bluegrass, ...	8	1	.....	.....	2	.....	.....	.....	.....	5	4	1	.....	27	.....
Polygonum aviculare,	Knotweed, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....
Polygonum convolvulus,	Black bindweed, ...	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Polygonum hydropiper,	Smartweed, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Polygonum persicaria,	Lady's thumb, ...	.....	1	.....	.....	.....	2	.....	.....	.....	.....	19	.....	.....	.....	.....
Polygonum sp.,	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE NO. IV—SHOWING OCCURRENCE OF FOREIGN SEEDS IN 202 OFFICIAL SAMPLES—Concluded.

NUMBER OF SAMPLES EXAMINED.		30	20	2	3	7	6	3	1	4	6	73	3	2	33	9
NAMES OF.		Alsike clover.	Alfalfa.	Barley.	Buckwheat.	Crimson clover.	German millet.	Hungarian millet.	Kentucky bluegrass.	Oats.	Orchard grass.	Red clover.	Rye grass.	Red top.	Timothy.	White clover.
FOREIGN SEEDS.		Number of Times Occurring.														
Scientifis Name.	Common Name.															
Potentilla sp.,	Five finger,	2													24	2
Prunella vulgaris,	Heal-all,	3										13				2
Ranunculus acris,	Tall buttercup,				1											
Rudbeckia hirta,	Brown-eyed Susan,	1													3	
Rumex acetosella,	Sorrel,	20	2			2					3	16			11	8
Rumex crispus,	Curled dock,	9	1			1				1	3	33			1	4
Salsola tragus,	Russian thistle,							1								
Secale cereale,	Rye,									1						
Sherardia arvensis,	Blue field madder,					1									1	1
Silene dichotoma,	Forked catchfly,	3				1										
Silene noctiflora,	Night flowering catch-fly,	18									1	1				6
Silene vulgaris,	Bladder campion,	2										1				
Sisymbrium altissimum,	Tumbling mustard,	2				1										
Sisymbrium officinale,	Hedge mustard,														2	
Spergula arvensis,	Spurry,															3
Syntherisma linearis,	Small crab grass,						2					4				
Syntherisma sanguinalis,	Crab grass,						1	1				1				
Tragopogon pratensis,	Yellow goat's beard.						2									
Trifolium hybridum,	Alsike clover,		5			3					2	59			14	8
Trifolium incarnatum,	Crimson clover,						2				1	2				

Trifolium pratense,	Red clover,	21	2	.....	.....	1	.....	.....	.....	.....	1	.....	2	.....	15	6
Trifolium repens,	White clover,	28	.....	.....	.....	1	1	.....	.....	.....	.....	40	.....	.....	15	.....
Triticum aestivum,	Wheat,	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....
Urtica sp.,	Nettle,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Verbascum blattaria,	Moth mullein,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	2	.....	.....
Verbena sp.,	Vervain,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vicia sp.,	Vetch,	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Zea mays,	Corn,	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....